

Serial No.: 10/728,379

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in the present application.

What is claimed is:

1-31. (canceled)

32. (previously presented) An electro-static discharge protection device comprising:

a first conductive type layer or a first conductive type substrate;

a first conductive type well and a second conductive type well which are arranged adjacent to each other in a surface of said first conductive type substrate or said first conductive type layer;

a first high concentration first conductive type region and a first high concentration second conductive type region which are formed in a surface of said second conductive type well; and

a second high concentration first conductive type region and a second high concentration second conductive type region which are formed in a surface of said first conductive type well, wherein:

said first high concentration first conductive type region is connected with a first power supply of a potential,

said second high concentration second conductive type region and said second high concentration first conductive type region are connected with a second power supply of a potential different from the potential of said first power supply,

Serial No.: 10/728,379

said first high concentration second conductive type region is connected with a trigger current supply circuit,

said first high concentration first conductive type region is separated into a plurality of divisional regions which are arranged in a direction orthogonal to a direction of arrangement of said second high concentration second conductive type region and said second high concentration first conductive type region, and

said first high concentration second conductive type region extends between every two of said plurality of divisional regions.

33. (original) The electro-static discharge protection device according to claim 32, wherein the extending portion of said first high concentration first conductive type region has a minimum width such that a contact can be formed in a permissible range of design rule, and another portion of said first high concentration first conductive type region other than said extending portion has a width less than said minimum width.

34-53. (canceled)

54. (previously presented) An ESD protection circuit, comprising:

a first bipolar transistor and a second bipolar transistor, said first and second bipolar transistors cooperating with one another to perform a SCR; and

a trigger device adapted to trigger said first and second bipolar transistors substantially simultaneously; wherein:

Serial No.: 10/728,379

one end of said trigger device is connected to a base region of said first bipolar transistor,
and

another end of said trigger device is connected to a base region of said second bipolar transistor.

55. (currently amended) The ESD protection service circuit according to claim 54, further comprising a first resistance element,

wherein said one end of said trigger device is connected to said base region of said first bipolar transistor via said first resistance element.

56 (previously presented) The ESD protection circuit according to claim 55, further comprising a second resistance element,

wherein said another end of said trigger device is connected to a ground via said second resistance element.

57. (currently amended) An [[The]] ESD protection circuit according to claim 56, comprising:

a first bipolar transistor and a second bipolar transistor, said first and second bipolar transistors cooperating with one another to perform a SCR;

a trigger device adapted to trigger said first and second bipolar transistors substantially simultaneously;

a first resistance element; and

a second resistance element.

Serial No.: 10/728,379

wherein one end of said trigger device is connected to a base region of said first bipolar transistor,

wherein another end of said trigger device is connected to a base region of said second bipolar transistor,

wherein said one end of said trigger device is connected to said base region of said first bipolar transistor via said first resistance element,

wherein said another end of said trigger device is connected to a ground via said second resistance element, and

wherein said another end of said trigger device is connected to said base region of said second bipolar transistor via said second resistance element.

58. (previously presented) The ESD protection circuit according to claim 54, wherein:

said an anode of said SCR is connected to a pad, and

said a cathode of said SCR is connected to a ground.

59. (previously presented) An ESD protection circuit comprising:

a first well of a first conductive type, said first well having a first region of said first conductive type and a second region of a second conductive type;

a second well of a second conductive type, said second well having a third region of said first conductive type and a fourth region of said second conductive type; and

a trigger device,

wherein said first well, second region and second well cooperate with each other to perform a first bipolar transistor;

Serial No.: 10/728,379

said first well, said second well and said third region cooperate with each other to perform a second bipolar transistor;

said first and second bipolar transistors cooperate with one another to perform a SCR;
and

one end of said trigger device is connected to said first region, and another end of said trigger device is connected to said fourth region.

60. (previously presented) The ESD protection circuit according to claim 59, further comprising:

a pad; and

a resistance element;

wherein said pad is connected to said first region via said resistance element; and

said one end of said trigger device is connected to said second region via said resistance element.

61. (previously presented) The ESD protection circuit according to claim 59, further comprising a resistance element,

Wherein said another end of said trigger device is connected to said third region and a ground via said resistance element.

62. (previously presented) The ESD protection circuit according to claim 59, wherein said trigger device triggers said first and second bipolar transistors substantially simultaneously.

Serial No.: 10/728,379

63. (previously presented) The ESD protection circuit according to claim 59, wherein said first region and said second region are free from being intervened by insulating film therebetween.

64. (previously presented) The ESD protection circuit according to claim 59, wherein said third region and said fourth region are free from being intervened by insulating film therebetween.

65. (new) The ESD protection circuit according to claim 54, further comprising a third resistance element,

wherein an emitter region of said first bipolar transistor is connected to said base region of said first bipolar transistor via said third resistance element.

66. (new) The ESD protection circuit according to claim 54, further comprising a fourth resistance element,

wherein said base region of said second bipolar transistor is connected to a ground via said fourth resistance element.

67. (new) The ESD protection circuit according to claim 54, further comprising a second resistance element,

wherein said another end of said trigger device is connected to said base region of said second bipolar transistor via said second resistance element.

68. (new) An ESD protection circuit, comprising:

Serial No.: 10/728,379

a first bipolar transistor and a second bipolar transistor, said first and second bipolar transistors cooperating with one another to perform a SCR; and

a trigger device adapted to trigger said first and second bipolar transistors;

wherein:

one end of said trigger device is connected to a base region of said first bipolar transistor,

and

another end of said trigger device is connected to a base region of said second bipolar transistor.